

AMENDMENTS TO CLAIMS

1.-3. (canceled)

4. (currently amended) A fixation screw for fastening a graft ligament in a bone tunnel, the screw comprising:

an elongated shank having a distal end and a proximal end, and a central axis extending from the distal end to the proximal end; and

screw threads disposed on said shank and extending from the distal end to the proximal end, said screw threads defining an outer periphery of said shank;

wherein the proximal end defines a generally planar end surface disposed transversely to the central axis and at an angle thereto other than a normal angle, and the planar end surface is formed so that the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads;

wherein said shank is of tubular structure;

wherein said shank is provided with apertures in a sidewall thereof; and

~~The fixation screw in accordance with claim 3~~ wherein the shank distal end defines a plane normal to the shank central axis.

5. (canceled)

6. (currently amended) The fixation screw in accordance with claim ~~2~~ 4 wherein the angle is about 40°-55°.

7. (canceled)

8. (currently amended) A fixation screw comprising an elongated shank having a distal end portion, a proximal end, and a central axis extending from the distal end portion to the proximal end, and screw threads disposed on said shank and extending from the distal end portion to the proximal end, said screw threads defining an outer periphery of said shank;

the proximal end comprising ~~a generally planar end surface~~
disposed an annular end surface entirely disposed in a single plane extending transversely to the axis and at an angle thereto other than a normal angle, said planar end surface being formed so that the outer periphery of said shank is concentric with a maximum outer diameter of said screw thread;

wherein said shank is of tubular structure.

9. (Original) The fixation screw in accordance with claim 8 wherein said shank is provided with apertures in a sidewall thereof.

10. (currently amended) ~~The fixation screw in accordance with claim 9~~ A fixation screw comprising an elongated shank having a distal end portion, a proximal end, and a central axis extending from the distal end portion to the proximal end, and screw threads disposed on said shank and extending from the distal end portion to the proximal end, said screw threads defining an outer periphery of said shank;

the proximal end comprising a generally planar end surface disposed transversely to the axis and at an angle thereto other than a normal angle, said planar end surface being formed so that

the outer periphery of said shank is concentric with a maximum outer diameter of said screw thread;

wherein said shank is of tubular structure;

wherein said shank is provided with apertures in a sidewall thereof; and

wherein the shank distal end defines a plane normal to the shank central axis.

11. (canceled)

12. (currently amended) The fixation screw in accordance with claim ~~8~~ 10 wherein the angle is about 40°-55°.

13. (Currently Amended) A fixation screw for fastening a graft ligament in a bone tunnel, said screw comprising:

an elongated tubular shank having:

a ~~generally conically shaped~~ distal end portion;

a proximal end;

a central axis extending from the distal end portion to the proximal end; and

screw threads disposed on said shank and extending from the distal end portion to the proximal end, ~~and~~ the screw threads defining an outer periphery of said shank;

the proximal end comprising ~~a generally planar end surface disposed~~ an annular end surface entirely disposed in a single plane extending transversely to the central axis and at an angle thereto other than a normal angle, and the planar end surface is ~~formed so~~ configured such that said the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads, and ~~appropriate~~ the end surface

is adapted for positioning ~~the end surface~~ as generally a continuation of surrounding bone surface of a body in which the graft ligament is fastened.

14. (Original) The fixation screw in accordance with claim 13 wherein the angle is about 40°-55°.

15. (Original) A graft ligament anchor assembly comprising:
a tubular body having a bore therethrough and proximal and distal ends, said tubular body being adapted for placement in a bone tunnel proximate an opening thereof in a bone surface;

said tubular body comprising a deformable wall defining at least in part a chamber for receiving a graft ligament therein;
and

a fixation screw for insertion into said tubular body axially of said tubular body, for impinging upon said deformable wall so as to press said deformable wall, and hence the graft ligament received in the chamber, toward a wall of the bone tunnel, to fix the graft ligament in the bone tunnel, said screw comprising:

an elongated shank having

a distal end portion;

a proximal end;

a central axis extending from the distal end portion to the proximal end; and

screw threads disposed on said shank and extending from the distal end portion to the proximal end; and

the proximal end comprising a generally planar end surface disposed transversely to the axis and at an angle thereto other than a normal angle and appropriate for positioning as

generally a continuation of surrounding bone surface of a body in which the graft ligament is fastened.

16. (Original) The anchor assembly in accordance with claim 15 wherein said screw shank is of a tubular structure.

17. (Original) The fixation screw in accordance with claim 16 wherein said screw shank is provided with apertures in a sidewall thereof.

18. (Original) The fixation screw in accordance with claim 17 wherein the shank distal end defines a plane normal to the shank central axis.

19. (Original) The fixation screw in accordance with claim 15 wherein the distal end portion is generally conically-shaped.

20. (Original) The fixation screw in accordance with claim 15 wherein the angle is about 40°-55°.

21-25. (canceled)

26. (currently amended) A fixation screw for fastening a graft ligament in a bone tunnel, the screw comprising:

an elongated shank having a distal end and a proximal end, and a central axis extending from the distal end to the proximal end;

screw threads disposed on said shank and extending from the distal end to the proximal end, said screw threads defining an outer periphery of said shank;

wherein the proximal end defines ~~a generally planar end surface disposed~~ an annular end surface entirely disposed in a single plane extending transversely to the central axis and at an angle thereto other than a normal angle, and the ~~planar~~ end surface is formed so that the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads; and

wherein said shank is of a tubular structure.

27. (currently amended) A fixation screw for fastening a graft ligament in a bone tunnel, the screw comprising:

an elongated shank having a distal end and a proximal end, and a central axis extending from the distal end to the proximal end;

screw threads disposed on said shank and extending from the distal end to the proximal end, said screw threads defining an outer periphery of said shank;

wherein the proximal end defines ~~a generally planar end surface disposed~~ an annular end surface entirely disposed in a single plane extending transversely to the central axis and at an angle thereto other than a normal angle, and the ~~planar~~ end surface is formed so that the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads;

wherein said shank is of a tubular structure; and

wherein said shank is provided with apertures in a sidewall thereof.

28. (previously presented) A fixation screw for fastening a graft ligament in a bone tunnel, the screw comprising:

an elongated shank having a distal end and a proximal end, and a central axis extending from the distal end to the proximal end;

screw threads disposed on said shank and extending from the distal end to the proximal end, said screw threads defining an outer periphery of said shank;

wherein the proximal end defines a generally planar end surface disposed transversely to the central axis and at an angle thereto other than a normal angle, and the planar end surface is formed so that the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads;

wherein said shank is of a tubular structure;

wherein said shank is provided with apertures in a sidewall thereof; and

wherein the shank distal end defines a plane normal to the shank central axis.

29. (currently amended) A fixation screw for fastening a graft ligament in a bone tunnel, the screw comprising:

an elongated shank having a distal end and a proximal end, and a central axis extending from the distal end to the proximal end;

screw threads disposed on said shank and extending from the distal end to the proximal end, said screw threads defining an outer periphery of said shank;

wherein the proximal end defines ~~a generally planar end surface disposed~~ an annular end surface entirely disposed in a single plane extending transversely to the central axis and at an angle thereto other than a normal angle, and the ~~planar~~ end surface is formed so that the outer periphery of said shank is

concentric with a maximum outer diameter of said screw threads;
and

wherein said shank is of tubular structure.

30. (currently amended) A fixation screw for fastening a graft ligament in a bone tunnel, the screw comprising:

an elongated shank having a distal end and a proximal end,
and a central axis extending from the distal end to the proximal end;

screw threads disposed on said shank and extending from the distal end to the proximal end, said screw threads defining an outer periphery of said shank;

wherein the proximal end defines ~~a generally planar end surface disposed~~ an annular end surface entirely disposed in a single plane extending transversely to the central axis and at an angle thereto other than a normal angle, and the ~~planar~~ end surface is formed so that the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads;

wherein said shank is of tubular structure; and

wherein said shank is provided with apertures in a sidewall thereof.

31. (previously presented) A fixation screw for fastening a graft ligament in a bone tunnel, the screw comprising:

an elongated shank having a distal end and a proximal end,
and a central axis extending from the distal end to the proximal end;

screw threads disposed on said shank and extending from the distal end to the proximal end, said screw threads defining an outer periphery of said shank;

wherein the proximal end defines a generally planar end surface disposed transversely to the central axis and at an angle thereto other than a normal angle, and the planar end surface is formed so that the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads;

wherein said shank is of tubular structure;

wherein said shank is provided with apertures in a sidewall thereof; and

wherein the shank distal end defines a plane normal to the shank central axis.

32. (currently amended) A fixation screw comprising:

an elongated shank having:

a distal end portion;

a proximal end;

a central axis extending from the distal end portion to the proximal end; and

screw threads disposed on said shank and extending from the distal end portion to the proximal end, said screw threads defining an outer periphery of said shank;

the proximal end comprising ~~a generally planar end surface disposed~~ an annular end surface entirely disposed in a single plane extending transversely to the axis and at an angle thereto other than a normal angle, and said ~~planar~~ end surface is formed so that the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads; and

wherein said shank is of tubular structure.

33. (currently amended) A fixation screw comprising:

an elongated shank having:

a distal end portion;

a proximal end;

a central axis extending from the distal end portion to the proximal end; and

screw threads disposed on said shank and extending from the distal end portion to the proximal end, said screw threads defining an outer periphery of said shank;

the proximal end comprising ~~a generally planar end surface~~ disposed an annular end surface entirely disposed in a single plane extending transversely to the axis and at an angle thereto other than a normal angle, said ~~planar~~ end surface is formed so that the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads;

wherein said shank is of tubular structure; and

wherein said shank is provided with apertures in a sidewall thereof.

34. (previously presented) A fixation screw comprising:
an elongated shank having:

a distal end portion;

a proximal end;

a central axis extending from the distal end portion to the proximal end; and

screw threads disposed on said shank and extending from the distal end portion to the proximal end, said screw threads defining an outer periphery of said shank;

the proximal end comprising a generally planar end surface disposed transversely to the axis and at an angle thereto other than a normal angle, and said planar end surface is formed so

that the outer periphery of said shank is concentric with a maximum outer diameter of said screw threads;

wherein said shank is of tubular structure;

wherein said shank is provided with apertures in a sidewall thereof; and

wherein the shank distal end defines a plane normal to the shank central axis.